

RECORDS AND DESCRIPTIONS OF NEOTROPICAL
CRANE-FLIES (TIPULIDÆ, DIPTERA), XXIX

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The present article continues the series of reports on tropical American crane-flies, the preceding part having been published in the *Journal of the New York Entomological Society*, 62: 139-152; 1954. At this time I am considering chiefly species from Peru, collected by Señor Luis E. Peña and by Felix Woytkowski, the latter assisted by his son George. A few further species from various sources are acknowledged in the text. I am greatly indebted to all these entomologists and friends who have so continued to enlarge our knowledge of the vast crane-fly fauna of the Neotropics. The types are preserved in my personal collection of these flies.

Genus *Limonia* Meigen*Limonia* (*Dicranomyia*) *altandina* new species

General coloration gray, the præcutum with a broad median stripe; antennæ black, the basal flagellar segments subglobular; wings whitish hyaline, unpatterned; *Sc* relatively short, cell 1st M_2 closed; male hypopygium with the ventromesal lobe of the basistyle large, dark-colored; ventral dististyle complex in structure.

MALE. Length about 6.5-7 mm.; wing 7.5-8.5 mm.

FEMALE. Length about 7-7.5 mm.; wing 7.5-8.5 mm.

Rostrum brownish black; palpi black. Antennæ black, scape weakly pruinose; basal flagellar segments subglobular to short-oval, the outer ones slightly longer, exceeding their verticils; terminal segment not or scarcely exceeding the penultimate in length. Head gray, the vertex with a more or less distinct Λ -shaped brown area; anterior vertex broad, nearly three times the diameter of the scape.

Pronotum infuscated above, gray on sides. Mesonotum gray, the præcutum with a broad median brown stripe that is weakly split behind, the lateral stripes ill-defined; scutal lobes weakly patterned with brown; scutellum somewhat lighter gray. Pleura and pleurotergite clear light gray; dorsopleural membrane dusky. Halteres with stem yellow, clearest at base, knob dark brown. Legs with the coxæ obscure yellow, sparsely pruinose; remainder of legs yellowish brown to brownish black, the outer segments darkest. Wings whitish hyaline, unpatterned; preareular field more yellowed; veins brown. Venation: *Sc* relatively short, Sc_1 ending just before

to opposite origin of R_s , Sc_1 alone approximately four-fifths R_s ; cell 1st M_2 closed, subequal to vein M_4 ; $m-cu$ slightly variable in position, from shortly before to beyond the fork of M .

Abdomen dark brown, sparsely gray pruinose, in cases the lateral tergites bordered laterally by pale; hypopygium dark brown. Male hypopygium with the tergite transverse, the caudal margin with a small median notch and dorsal furrow, leaving two obtuse lobes; scattered elongate setæ on posterior two-thirds of tergite, concentrated on the lobes. Basistyle relatively small, its ventromesal lobe large, dark-colored, provided with unusually long and abundant setæ; on face of lobe at near midlength with a small accessory lobule. Dorsal dististyle a slender strongly curved sickle, very gradually narrowed to the tip. Ventral dististyle with the body relatively small; rostral prolongation a broadly flattened plate that is extended into two spines, the outer one from a larger basal tubercle, on lower face of prolongation with a small oval setiferous lobule; distad of base of prolongation with a conspicuous dark-colored lobe, occupying the notch between the prolongation and the main body of the style, provided with abundant short setæ; inner margin of style just cephalad of the rostral prolongation with a linear row of long strong setæ. Gonapophysis with the mesal-apical lobe slender, gently curved.

Holotype, ♂, La Raya, Cuzco, Peru, 4300 meters, February 21, 1950 (L. E. Peña). Allotopotype, ♀. Paratopotypes, several ♂ ♀.

From other generally similar regional forms that have the male hypopygium complicated by outgrowths, the present fly is most like *Limonia* (*Dicranomyia*) *andinalta* new species, and a few others, all well distinguished from one another by marked hypopygial characters. Other species, including *L. (D.) diura* Alexander, *L. (D.) humerosa* Alexander, and *L. (D.) muliercula* Alexander, have comparable yet entirely distinct male hypopygia.

Limonia (*Dicranomyia*) *andinalta* new species

General coloration light gray, the præscutum with indications of two intermediate brown stripes; antennæ black, the flagellar segments moniliform; anterior vertex broad; halteres pale; legs dark brown to brownish black; wings whitish subhyaline, without a stigmal darkening; male hypopygium very complex, especially the basistyle and ventral dististyle, which bear distinctive outgrowths and modifications; rostral spines two, powerful, more or less recurved.

MALE. Length about 6–6.5 mm.; wing 7–7.5 mm.

Rostrum and palpi black. Antennæ black throughout, moniliform; flagellar segments subglobular, the outer ones passing into short-oval; terminal segment oval, only a trifle longer than the penultimate; segments exceeding the longest verticils. Head light gray, the center of vertex more infuscated; anterior vertex relatively broad, nearly four times the diameter of the scape.

Thorax gray, the præscutum with indications of two intermediate brown stripes, the usual lateral pair obsolete. Halteres pale. Legs with the coxæ light gray; trochanters obscure yellow; remainder of legs dark brown to brownish black, the femoral bases obscure yellow. Wings whitish subhyaline, more yellowed at base; stigma lacking; veins brown. Venation: *Sc* short, *Sc*₁ ending a little before origin of *Rs*, *Sc*₁ long, approximately two-thirds *Rs*; cell 1st *M*₂ closed, open by atrophy of *m* in one wing of type; *m-cu* at fork of *M*; vein 2nd *A* nearly straight.

Abdomen dark gray; hypopygium dark brown. Male hypopygium very complex in structure. Ninth tergite transverse, strongly narrowed outwardly, the caudal margin with two obtuse lobes that are separated by a V-shaped notch, the lobes with abundant long setæ. Basistyle relatively small, its ventromesal lobe unusually large, the area exceeding that of the remainder of style, appearing as an elongate appendage that widens outwardly, the apex pale, unequally bilobed; at near midlength of face of lobe with a low blackened lobule; mesal face of basistyle at apex with a further development of blackened lobes and points. Dorsal dististyle a moderately curved rod, the tip relatively short. Ventral dististyle large and complex, especially the rostral prolongation which is slightly dilated outwardly, the apex with a dense brush or comb of setæ; face of prolongation beyond the spines more or less protuberant, blackened; rostral spines two, strong and powerful, from small tubercles, slightly recurved; from the base of style, lying between it and the basistyle a further conspicuous lobe that terminates in a dense brush of long yellow setæ. Gonapophysis with the mesal-apical lobe slender, at apex curved to an acute point. Aedeagus relatively slender, glabrous.

Holotype, ♂, La Raya, Cuzco, Peru, 4300 meters, February 21, 1950 (L. E. Peña). Paratopotype, ♂, pinned with type.

The most similar species is *Limonia* (*Dicranomyia*) *altandina* new species, with which it was associated in nature. The two flies are most readily told by the different structure of the male hypopygium.

Limonia (*Dicranomyia*) *clavistyla* new species

General coloration dark brown, pruinose, more heavily so on the thoracic pleura; halteres elongate; wings with a strong dusky ground; basal section of vein *R*₄₊₅ long, approximately four-fifths *Rs*; inner end of cell 1st *M*₂ arcuated; male hypopygium with the main body of the ventral dististyle a long clavate lobe, constricted at near midlength, the outer half more darkened.

MALE. Length about 6.5 mm.; wing 6 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments short-oval; verticils short. Head gray; anterior vertex relatively broad, nearly three times the diameter of the scape.

Pronotum and mesonotum dark brown, sparsely pruinose; pleurotergite and pleura more heavily pruinose. Halteres long and slender, blackened.

Legs with the coxæ brownish testaceous; trochanters obscure yellow; remainder of legs blackened, the femoral bases restrictedly paler. Wings with a strong dusky tinge, the stigma scarcely indicated; prearcular and costal fields a very little more yellowed; veins brown. Venation: Sc_1 ending opposite origin of R_s , Sc_1 alone from two-thirds to three-fourths R_s ; free tip of Sc_2 and R_2 in transverse alignment, both pale; basal section of R_{4+5} long, approximately four-fifths to five-sixths R_s ; inner end of cell 1st M_2 produced basad, arcuated; *m-cu* at fork of M .

Abdomen elongate, tergites black, their caudal borders very narrowly pale; basal sternites obscure brownish yellow, the outer segments and hypopygium blackened; ventral dististyle paler. Male hypopygium with the tergite generally transverse-oval in outline, with both the caudal and cephalic borders convex; several strong setae on posterior half of tergite. Basistyle darkened; ventromesal lobe complex, stout, bearing on its face near base an even longer but more slender darkened lobe, this with a linear series of about five very powerful fasciculate setae. Dorsal dististyle a nearly straight slender rod, the apex very suddenly narrowed, extended at a right angle into a straight spine. Ventral dististyle very deeply divided, the main body a long clavate lobe, constricted at near midlength, the outer half more darkened; rostral portion of style complex, the basal half or more enlarged, the shorter slender apex beginning opposite the spines; in the notch at base of prolongation an oval lobe that bears numerous long scattered setae; lower edge of enlarged part of rostrum bearing a small dark-colored lobe. Gonapophysis with mesal-apical lobe relatively slender, the tip acute, the margin back from tip coarsely roughened or erose.

Holotype, ♂, Chinchao, Huanuco, Peru, on wooded hills, 2500 meters, September 22, 1947 (George Woytkowski).

The present fly is related to species such as *Limonia* (*Dicranomyia*) *opposita* Alexander, *L. (D.) boliviana* Alexander, *L. (D.) malitiosa* Alexander, *L. (D.) muliercula* Alexander, and some others, differing especially in the distinctive male hypopygium, particularly the clavate lobe of the ventral dististyle.

***Limonia* (*Dicranomyia*) *peñana* new species**

General coloration gray, the praescutum gibbous; antennae black; halteres black, the base of stem vaguely paler; wings narrow, subhyaline, unpatterned; Sc relatively long, Sc_1 ending a short distance beyond origin of R_s , Sc_1 long; cell M_2 open by the atrophy of m ; *m-cu* at or close to fork of M ; male hypopygium moderately complex in structure; a single rostral spine. MALE. Length about 6 mm.; wing 7 mm.

FEMALE. Length about 6.5 mm.; wing 7.5 mm.

Rostrum dark brown on dorsal surface, paling to light yellow beneath; palpi black. Antennae black, scape pruinose; basal flagellar segments short-oval, the outer ones more elongate, the terminal one only slightly exceeding the penultimate; verticils shorter than the segments. Head brownish gray,

clearer gray behind, with indications of a still darker median vitta; anterior vertex of male narrow, of female broader, approximately three times the diameter of the scape.

Pronotum above brownish gray, clearer on sides. Mesonotal præscutum high and gibbous, dark gray, the usual stripes more infuscated to produce a vaguely patterned appearance; posterior sclerites of notum brown, the central area of the scutum and scutellum light gray, the latter very flat; mediotergite gray, conspicuously patterned with darker. Pleura chiefly light gray, the ventral sternopleurite slightly darker. Halteres black, the base of stem narrowly and vaguely paler. Legs with the coxæ dark brown, especially the fore pair, pruinose; trochanters obscure yellow; femora light brown, tibiæ somewhat darker, especially at tips; tarsi brownish black. Wings narrow, whitish subhyaline, unpatterned, the base and costal margin slightly more yellowed; veins brown, those in the yellowed parts, together with M , paler. Venation: Sc relatively long, Sc_1 ending a short distance beyond origin of Rs , at near one-fifth the length of the vein, Sc_1 long; cell M_2 open by atrophy of m ; cell M_2 subequal in length to its petiole; $m-cu$ at or close to fork of M ; vein $2nd A$ evenly and gently convex, the cell of moderate width.

Abdomen dark brown, sternites a trifle paler. Ovipositor with cerci very weak and slender, decurved (possibly a deformity of the type); hypovalvæ strong, straight. Male hypopygium with the ninth tergite transverse, the caudal margin convexly rounded, with a narrow median incision, the lobes blackened, provided with numerous long yellow setæ. Basistyle with the ventromesal lobe long and conspicuous, nearly as large as the body of style, bearing a small setiferous lobule on outer face near midlength. Dorsal dististyle a strongly curved pale sickle, the tip acute. Ventral dististyle with the body relatively small, only about two-thirds that of the comparable part of the basistyle, dark-colored; rostral prolongation large and powerful, bearing a strong spine on outer margin at near midlength, arising from a strong basal tubercle that exceeds one-third the length of the spine. Gonapophysis with mesal-apical lobe pale, gently curved to the acute tip.

Holotype, ♂, El Cuzco, Cuzco, Peru, February 28, 1950 (L. E. Peña). Allotype, ♀, La Raya, Cuzco, 4300 meters, February 21, 1950 (L. E. Peña).

Limonia (Dicranomyia) peñana is named in honor of the collector, Señor Luis E. Peña, to whom I am indebted for very many Tipulidæ from Bolivia, Peru and Chile. The allotype was associated in nature with *L. (D.) altandina* new species, *L. (D.) andinalta* new species, and *L. (D.) anax* Alexander. In the wing shape and venation, the fly suggests the wide-spread Holarctic *L. (D.) longipennis* (Schummel) but there evidently is no close affinity, the male hypopygium being entirely different and more suggestive of the associated species above mentioned.

***Limonia (Geranomyia) macrauchenia* new species**

Mesonotal præscutum gray with five dark brown stripes; femora obscure yellow with a dark brown subterminal ring; wings whitish subhyaline with a relatively heavy brown pattern; Sc_1 ending about opposite one-third the length of Rs ; male hypopygium with the ventral dististyle large and fleshy, its area exceeding three times that of the basistyle; rostral prolongation slender, with a conspicuous basal or necklike portion before the spines; the latter long and slender, arising from the summit and side of a sclerotized caplike plate.

MALE. Length, excluding rostrum, about 7 mm.; wing 8 mm.; rostrum about 3.3 mm.

Rostrum and palpi black, the former long, nearly one-half the remainder of body. Antennæ with scape and pedicel black, flagellum dark brown; flagellar segments suboval to subcylindrical, longer than the verticils; terminal segment about one-third longer than the penultimate. Head light gray, the posterior vertex with two blackened lines delimiting a median vitta, the latter subequal in width to the anterior vertex.

Pronotum buffy, patterned with dark brown, scutellum more brightened. Mesonotal præscutum light gray with five dark brown stripes, the central three narrow, a trifle wider than the gray interspaces; sublateral dark stripes beginning behind the obscure yellow humeral triangles, the extreme lateral borders blue-gray; posterior sclerites of notum dark gray, each scutal lobe with a semicircular dark border; posterior part of mediotergite with a pair of more brownish areas. Pleura and pleurotergite dark gray, dorsal sternopleurite light brown; dorsopleural membrane buffy. Halteres with stem pale yellow, knob dark brown. Legs with coxæ dark brown, paler at tips; trochanters yellow; femora obscure yellow with a dark brown subterminal ring, this a little broader than the yellow apex; tibiæ yellowish brown, tarsi passing into black; claws long and slender, a single well-developed tooth nearly basal in position. Wings whitish subhyaline, the costal interspaces more yellowed; a relatively heavy brown pattern, as follows: A series of five darker costal areas, the third a major common one over origin of Rs and fork Sc ; fourth area stigmal, not confluent with a spot over fork of Rs ; other dark brown seams over cord and outer end of cell 1st M_2 ; paler brown marginal clouds at ends of veins, those on the anals large; wing apex and cell M vaguely suffused; veins yellow, darker in the patterned parts. Venation: Sc_1 ending about opposite one-third the length of Rs , Sc_2 at its tip; Rs nearly three times $m-cu$; $r-m$ much reduced by the approximation of veins M_{1+2} and R_{4+5} ; $m-cu$ shortly before fork of M .

Abdomen, including hypopygium, dark brown, the incisures slightly paler. Male hypopygium with the ninth tergite transverse, narrowed posteriorly, the caudal margin with two rounded lobes that are separated by a narrower median notch; margins of lobes thickened or sclerotized, provided with numerous setæ that are virtually restricted to the thickened borders. Basistyle with its ventromesal lobe large, obtuse, unmodified. Dorsal dististyle a gently curved rod, its tip extended into a straight spine. Ventral dististyle large and fleshy, its area exceeding three times the total area of the

basistyle; rostral prolongation slender, especially the neck portion; spines from a sclerotized plate or cap, long and slender, straight, subequal in length but with one arising from the summit, the other from the face of the cap and thus appearing unequal. Gonapophysis with the mesal-apical lobe appearing as a slender curved terete spine, its tip acute.

Holotype, ♂, Chinchao, Huanuco, Peru, on wooded hills at 2500 meters, September 13, 1947 (George Woytkowski).

The present fly is closest to *Limonia* (*Geranomyia*) *destricta* Alexander, differing in the coloration of the body and legs and in the structure of the male hypopygium, particularly the ventral dististyle.

***Limonia* (*Geranomyia*) *oneris* new species**

Size medium (wing, male, over 7 mm.); præscutum gray, with three narrow dark brown stripes on disk, additional to the less evidently darkened lateral borders; femora infuscated, deepening to a broad black subterminal ring; wings grayish subhyaline, patterned with brown; male hypopygium with the basistyle small, its area about two-fifths that of the ventral dististyle; rostral prolongation short, the two long slender spines arising from a low common tubercle; mesal-apical lobe of gonapophysis long and slender, pale.

MALE. Length, excluding rostrum, about 7.5 mm.; wing 7.2 mm.; rostrum about 3.2 mm.

Rostrum elongate, about two-fifths the wing, black throughout. Antennæ black; flagellar segments oval, verticils inconspicuous. Head light gray; posterior vertex extensively blackened on either side of the median ground line.

Pronotum gray, with three darker areas. Mesonotal præscutum gray, the broad lateral borders more infuscated; disk with three narrow still darker stripes that are wider than the interspaces, the central one not quite reaching the suture; humeral region of præscutum restrictedly more yellowed; scutum dark gray, each lobe with a semicircular more blackened mark, the opening behind; scutellum testaceous brown, narrowly more infuscated medially; postnotum dark gray. Pleura chiefly brownish black, pruinose; dorsal sternopleurite somewhat paler; dorsopleural region more buffy; region of the wing base reddened. Halteres with stem light yellow, knob brownish black. Legs with the coxæ dark brown, sparsely pruinose, the tips pale; trochanters yellow; femora infuscated, deepening to a broad more blackened subterminal ring, this about three times the yellow tip; tibiæ and tarsi brown, the outer segments of the latter brownish black. Wings pale grayish subhyaline, restrictedly patterned with medium brown, as follows: Stigma; a virtually common spot at fork of *Sc* and origin of *Rs*; supernumerary crossvein in cell *Sc*; cord and outer end of cell *1st M*₂, and arculus; small paler marginal clouds at ends of certain of the longitudinal veins, largest and most evident on the Anal veins; veins brownish yellow, pale brown in the patterned areas. Venation: *Sc*₁ ending about opposite one-

third the length of R_s , Sc_2 near its tip; distal section of R_{4+5} arcuated on basal third, slightly widening the cell; cell 1st M_2 subequal in length to distal third of vein M_3 ; *m-cu* close to fork of M .

Abdomen dark brown. Male hypopygium with the tergite relatively long, narrowed outwardly, the posterior border with a U-shaped notch; lateral lobes with long setæ, some continued along the outer border to the base. Basistyle relatively small, its area about two-fifths that of the ventral dististyle, the ventromesal lobe simple, slightly narrowed or constricted at base. Dorsal dististyle a gently curved rod, the tip acute. Ventral dististyle with the rostral prolongation short, with two long slender spines from a low common tubercle, one of the spines from a small further enlargement. Gonapophysis with mesal-apical lobe long and slender, pale, gently curved to the narrow obtuse tip.

Holotype, ♂, Sariapampa, Huanuco, Peru, 3600 meters, May 12, 1946 (Felix Woytkowski).

Although it bears a resemblance to *Limonia* (*Geranomyia*) *amoenalis* Alexander, the present fly differs in all details of coloration and especially in the structure of the male hypopygium.

Limonia (*Geranomyia*) *stenoleuca* new species

Mesonotum and dorsal half of pleura black, the ventral pleurites abruptly yellow; rostrum elongate, nearly two-thirds the body or wing; femora yellow, the tips conspicuously blackened; fore and middle tarsi extensively whitish yellow, the posterior pair snowy white, not dilated; wings with a strong blackish tinge, the prearcular border and narrow costal field whitened, the color not involving the radial cells; Sc short, Sc_1 ending opposite one-third to nearly one-half R_s ; abdominal tergites black, sternites abruptly yellow. FEMALE. Length, excluding rostrum, about 7.5–8 mm.; wing 7.5–8 mm.; rostrum about 5–5.2 mm.

Rostrum elongate, nearly two-thirds the body or wing, black, the tips of the labial palpi slightly paler. Antennæ black; flagellar segments long-cylindrical; verticils of the intermediate segments unilaterally distributed, exceeding the segments. Head with the front and anterior vertex pale, the color continued backward over the center of the posterior vertex as a capillary pale line, the remainder brownish black.

Pronotum brown. Mesonotum almost uniformly brownish black, the humeral region of the præscutum restrictedly more reddish; posterior sclerites, especially the posterior border of scutellum and suture of the postnotum paler. Dorsal region of pleura similarly polished black, the ventral pleura and sternum abruptly yellow. Halteres with stem brown, paler at base, knob blackened. Legs with all coxæ and trochanters light yellow; femora yellow, the tips conspicuously blackened, the amount subequal on all legs; tibiæ brown, the tips narrowly more darkened; fore and middle tarsi pale yellow or whitish yellow, the terminal segment blackened, posterior tarsi snowy white but not dilated as in some other more or less similar regional species; outer tarsal segments of posterior legs broken. Wings

with a strong blackish tinge, the prearcular field and narrow costal border white, the latter including cells *C* and *Sc*, together with *Sc*₁, the pale color not crossing vein *R*; stigma oval, darker brown; vague to scarcely evident darker seams at origin of *Rs* and over the cord; veins brown, not conspicuously paler in the whitened parts. Venation: *Sc* short, *Sc*₁ ending about opposite one-third to nearly one-half *Rs*, *Sc*₂ near its tip; supernumerary crossvein in cell *Sc* at near one-third the distance between *h* and the origin of *Rs*; free tip of *Sc*₂ and *R*₂ in approximate transverse alignment; cell 1st *M*₂ long, subequal to vein *M*₁₊₂ beyond it; *m-cu* at or shortly beyond the fork of *M*.

Abdominal tergites brownish black to black, sternites abruptly yellow; genital shield blackened; both cerci and hypovalvæ yellow, the bases of the latter extensively blackened.

Holotype, ♀, Fundo Sinchono, Huanuco, 1600 meters, August 5, 1947 (J. M. Schunke). Paratopotype, ♀, on pin beneath the holotype.

From the other regional species having whitened posterior tarsi, including *Limonia* (*Geranomyia*) *lacteitarsis* Alexander, *L. (G.) luteimana* Alexander, and *L. (G.) pallidapex* Alexander, the present fly differs very evidently in the wing pattern, especially the marked reduction of the pale costal border. The tarsi are slender, not more or less dilated as in the species above listed.

***Limonia* (*Geranomyia*) *yunquensis* new species**

Size small (wing of male 4.5 mm.); rostrum about one-third the length of wing; mesonotal præscutum olive yellow with three poorly indicated more blackish stripes that are narrower than the interspaces; pleura obscure yellow; knobs of halteres blackened; legs medium brown, the outer tarsal segments darker; wings subhyaline, very restrictedly patterned with darker, including two costal areas additional to the stigma, including a common mark over the fork of *Sc* and origin of *Rs*; *Sc*₁ ending just beyond origin of *Rs*; male hypopygium with the dorsal dististyle extended into a long straight apical spine; rostral prolongation of ventral dististyle obtuse at tip, the two rostral spines subequal, straight, from very low contiguous basal tubercles; mesal-apical lobe of gonapophysis heavily blackened, broad at tip, the outer angle pointed.

MALE. Length, excluding rostrum, about 4 mm.; wing 4.5 mm.; rostrum about 1.5 mm.

Rostrum relatively short, less than one-half the remainder of body, black throughout; palpi black. Antennæ black; flagellar segments oval, terminal one pointed. Head black, with a continuous silvery median vitta from the narrow anterior vertex to the occiput.

Pronotum infuscated. Mesonotum obscure olive yellow, with three poorly indicated more blackish stripes that are narrower than the interspaces; median stripe broader and more clearly delimited than the laterals; scutal

lobes weakly infuscated; scutellum obscure yellow, parascutella darker; postnotum darkened medially, paling to obscure brownish yellow on sides, pleurotergite concolorous. Pleura obscure yellow, propleura slightly darker. Halteres with stem weakly darkened, knob blackened. Legs with the coxæ and trochanters yellow; remainder of legs medium brown, the outer tarsal segments darker, tibiæ not darkened at tips. Wings subhyaline, very restrictedly patterned with darker, including the subcircular brown stigma and two small spots over the supernumerary crossvein in cell *Sc* and a common area over the origin of *Rs* and fork of *Sc*, the two latter very faint and indicated chiefly by a darkening of the veins; anterior cord even less distinctly seamed with brown; veins brown. Venation: *Sc* short, *Sc*₁ ending just beyond origin of *Rs*, *Sc*₂ opposite or immediately before this origin; *Rs* long, about two and one-half times the basal section of *R*₄₊₅; cell 1st *M*₂ subequal in length to vein *M*₁₊₂ beyond it; *m-cu* immediately before fork of *M*, subequal in length to the distal section of *Cu*₁; cell 2nd *A* narrow, its outer end pointed.

Abdominal tergites dark brown, sternites paler; hypopygium infuscated. Male hypopygium with the tergite transverse, the caudal margin shallowly emarginate, lateral lobes low, provided with numerous long coarse setæ. Basistyle with ventromesal lobe oval, with coarse setæ, at its junction with the main body of the style with a small lobule that is provided with about six strong setæ. Dorsal dististyle strong, the apex drawn out into a long straight spine. Ventral dististyle relatively large, its total area nearly three times that of the basistyle; rostral prolongation relatively stout, the tip obtuse; two rostral spines that are a little longer than the prolongation beyond their bases; spines arising from very low tubercles that are placed close together and virtually contiguous. Gonapophysis with the mesal-apical lobe heavily blackened, the broad tip with the outer angle pointed. Aedeagus with the outer lateral angles terminating in an acute pale spinous point.

Holotype, ♂, El Yunque, Puerto Rico, in Sierra Palm forest, November 27, 1943 (Harry D. Pratt and Jenaro Maldonado Capriles).

This small fly is most similar to *Limonia (Geranomyia) subre-cisa* Alexander, differing therefrom in the coloration of the body and wings and in the details of structure of the male hypopygium, especially the dististyles and gonapophysis.

Genus *Sigmatomera* Osten Sacken

Sigmatomera (Sigmatomera) felix new species

General coloration of entire body fulvous yellow, the thorax polished, unpatterned; antennal flagellum very strongly binodose; knobs of halteres dark brown; femora obscure yellow, the tips brownish black; wings yellow, very restrictedly patterned with brown, including a narrow darker band at cord and the axillary region; *R*₂₊₃₊₄ and *R*₃₊₄ subequal; veins *R*₃ and *R*₄

diverging at outer ends; cell M_2 open by atrophy of basal section of M_3 . MALE. Length about 8 mm.; wing 9 mm.; antenna about 5.9 mm.

Rostrum brownish yellow; first segment of palpi obscure yellow, the outer segments brown. Antennae with scape short, brownish yellow, darker outwardly; remainder of antennæ black; basal flagellar segments of the normal *Sigmatomera* type, very strongly sinuously binodose, less accentuated on the outer segments. Head polished fulvous, with a narrow black transverse band across the cephalic part of the posterior vertex, extending from behind the eyes, completely crossing the vertex; anterior vertex narrowed, about two-thirds the diameter of the scape.

Thorax uniformly fulvous yellow, polished, without pattern. Halteres with stem yellow, knob dark brown. Legs with all coxæ and trochanters yellow; femora obscure yellow, the tips conspicuously brownish black, more intense immediately back from apex; tibiæ brownish yellow, the tips narrowly infuscated; tarsi brownish black to black. Wings yellow, the prearcular and costal regions more saturated; a restricted brown pattern, including a narrow darker band at cord, at its cephalic end involving the tips of *Sc* and R_{1+2} in a Y-shaped fork, the posterior end of the band a little expanded and paler; axillary region extensively darkened; small and vague clouds at fork of M_{1+2} and at tips of outer medial veins; a scarcely apparent clouding in outer radial field; veins yellow, darker in the patterned areas. Venation: *Rs* relatively short, straight; R_{2+3+4} subequal to R_{3+4} , R_2 thus far before the fork; cell R_3 not as deep as in *amazonica*, veins R_3 and R_4 more divergent at outer ends, cell R_2 at margins being only about one-half more extensive than cell R_3 ; cell M_2 open, cell *2nd* M_2 about as long as its petiole.

Abdomen opaque yellow, the posterior borders of the tergites narrowly infuscated; hypopygium relatively large, brown.

Holotype, ♂, Santa Isabel, Cuzco, Peru, 1700 meters, December 5, 1951 (Felix Woytkowski).

This distinct fly is named in honor of the collector, Mr. Felix Woytkowski, outstanding student of the flora and fauna of Peru. The only other described species of the genus having cell M_2 of the wings open is *Sigmatomera* (*Sigmatomera*) *amazonica* Westwood, of Amazonian Brazil, which differs conspicuously in the black thorax, heavily patterned wings, and distinct venational details.

Genus *Erioptera* Meigen

Erioptera (*Mesocyphona*) *celestior* new species

Belongs to the *dulcis* group; size relatively large (wing of female 5.4 mm.); general coloration of præscutum light gray with four very distinct brownish black stripes; scutellum obscure yellow; pleura black with a broad whitish longitudinal stripe; knobs of halteres weakly infuscated; femora yellow, with a broad black subterminal ring; wings dark brown, variegated

with about a dozen large white spots, with relatively few small white dots in the medial and cubital fields.

FEMALE. Length about 4.6 mm.; wing 5.4 mm.

Rostrum and palpi black. Antennæ with the scape black, the succeeding segments obscure yellow, outer flagellar segments passing into black; flagellar segments oval. Head buffy above, more grayish beneath.

Pronotum variegated obscure yellow and black; pretergites narrowly whitened. Mesonotal præscutum with the ground light gray, with four very distinct brownish black stripes, the intermediate pair separated by a much narrower line, the outer pair lateral in position, humeral region more buffy; scutum variegated black and buffy; scutellum obscure yellow; postnotum black. Pleura and pleurotergite black with a broad whitish longitudinal stripe. Halteres with stem white, knob weakly infuscated. Legs with the coxæ infuscated; trochanters yellow; femora obscure yellow, with a broad black subterminal ring, preceded and followed by narrower clear yellow annuli; basal and central parts of femora slightly infuscated, this color produced by very abundant linear scales and fewer setæ; tibiæ and tarsi light yellow, the tips of the latter infuscated. Wings with the ground dark brown, variegated by about a dozen large white spots, arranged about as in members of the *dulcis* group, together with slightly more numerous smaller white dots in the medial and cubital fields; proximal half of the costal field more brownish yellow; central part of cell *2nd A* a little brightened; veins brown, white in the spotted areas. Venation: R_{2+3+4} rather strongly elevated, about twice the basal section of R_3 ; cell *2nd M*₂ nearly twice its petiole.

Abdomen dark brown; cerci elongate, dark brown basally, paling to horn-yellow outwardly.

Holotype, ♀, Cerro Punta, Chiriqui, Panama, 6000 feet, October 1953 (Noël L. H. Krauss).

This attractive fly is most similar to *Erioptera (Mesocyphona) venustipes* Alexander, differing conspicuously in the pattern of the legs and wings. The combination of spotted and dotted white markings on the wing give the fly a distinctive facies.